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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,028	12/20/2000	Junichi Hayakawa	0670-251	6800

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ROBINSON INTELLECTUAL PROPERTY LAW OFFICE  
PMB 955  
21010 SOUTHBANK STREET  
POTOMAC FALLS, VA 20165

EXAMINER

LOCKETT, KIMBERLY R

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicant(s)

09/720,028

Applicant(s)

HAYAKAWA ET AL.

Examiner

Kim R. Lockett

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,6,7 and 9 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,7 and 9 is/are rejected.
- 7) ☐ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some \* c) ☐ None of:
    - 1. ☐ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,4,6,7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable Japan Patent 2000-308178 in view of Japan Patent 64-067100.

Japan Patent 2000-308178 discloses the use of a speaker diaphragm made from polypropylene injection molding having a generally cone shape, comprising a plurality of projections (4) forming a periodical structure along a circumferential direction in a slanted area of the speaker diaphragm, each projection curving along the circumferential direction as the speaker diaphragm comes near the edge portion (see the figure), a plurality of recesses (5) formed between the plurality of projections, wherein at least one surface is curved in an area from each projection to each recess.

Japan Patent 2000-308178 does not disclose the use of recesses that extend radially from a central area to an edge portion and wherein the odd number of projections are formed as counted along a circumferential direction, and the projection has a cross section like a screw propeller.

Japan Patent 64-067100 discloses the use of a polypropylene speaker diaphragm having recesses with bent portions that extend radially from a central area to an edge portion and wherein the odd number of projections are formed

as counted along a circumferential direction, and the projection has a cross section like a screw propeller. Japan Patent 64-067100 also discloses recesses that are thicker in a bottom area than another area. (see the figure).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the speaker as taught by Japan Patent 2000-308178 with the recesses as taught by Japan Patent 64-067100 in order to provide a speaker diaphragm with improved acoustic characteristics.

### ***Allowable Subject Matter***

3. The allowability of claims 1,2,4,6,7 and 9 has been withdrawn due to applicant's location of pertinent art.

4. Any inquiry of a **general nature or relating to the status of this application or filed papers** should be directed to the **Group receptionist whose telephone number is (703) 308-0956.**

Papers related to this application may be submitted to Group 2800 by facsimile transmission. Papers should be faxed to Group 2800 via the PTO 2800 Fax Center located at Crystal Plaza 4. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 O.G. 30 (November 15, 1989). The Group 2800 CP 4 Fax Center number is (703) 308-77(22 or 24). Fax numbers that provide an auto-reply fax receipt are: for before finals (703) 872-9318 and after finals (703) 872-9319.

For assistance in **Patent procedure, fees or general Patent questions** calls should be directed to the **Patents Assistance Center (PAC)** whose **telephone number is 800-786-9199**. Assistance is also available on the Internet at [www.uspto.gov](http://www.uspto.gov).

For requesting **copies of Cited Art, Office Actions or the like, or General Problem solving**, calls should be directed to the **TC 2800 Customer Service Office** whose telephone number is **703-306-3329** or by fax at **703-306-5515**.

Any inquiry concerning **this communication or earlier communications from the examiner** should be directed to **Kim Lockett** whose telephone number is **(703) 308-7615**. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi, can be reached on (703) 308-3370.

*Kim Lockett  
Patent Examiner  
Art Unit 2837*

  
KIMBERLY LOCKETT  
PRIMARY EXAMINER